What is claimed:

1. A method for discriminating between desired and undesired radiation events detected by a radiation detector in an imaging operation, comprising the steps of:

(a) obtaining a response function of said detector for a uniform field of radiation under conditions simulating an actual imaging operation;

(b) obtaining a radiation distribution in an actual imaging operation; and

(c) obtaining said desired radiation events by mathematically operating on said radiation distribution with said response function.

2. The method of claim 1 wherein the detector is used in a medical imaging device.

3. The method of claim 1 wherein the detector is a pixelated, cadmium zinc telluride (CZT) device.

4. The method of claim 3 wherein the step of obtaining a response function comprises obtaining a response function for each pixel of the CZT detector.

5. The method of claim 1 wherein the step of obtaining desired radiation events includes the steps of forming a least squares estimate of the number of desired events by taking a dot product of the energy response function for the actual imaging operation and a weighting vector determined during the step of obtaining a response function for a uniform radiation.